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Subject: YMP Comments Posting

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----- Forwarded by Naomi Lewis/YM/RWDOE on 07/09/2001 08:04 AM -----
YMP Comments Posting

July 06, 2001 11:58:29

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Comments: Physicians for Social Responsibility/Atlanta is a chapter of the national Physicians for Social Responsibility (PSR). Members and staff work to integrate the best medical understandings with public policy in the public interest.

- 1 [It's clear, now more than ever, that U.S. Government/Department of Energy policy regarding the Yucca Mountain repository should recognize that the site is unsuitable, that on-site storage should be utilized while efforts are made to locate a suitable site and that new waste production should be minimized and phased out.]

PSR/Atlanta refers DOE to publications by PSR National and the Institute for Environmental and Energy Research (IEER), and to the groups listed below, for more detailed objections to YUCCA and the EIS. We also include three supporting statements as background for our contention that YUCCA should be rejected.

Supporting Statement 1.

- 2 [PSR/Atlanta believes the Yucca Mountain repository decision should be a simple one. The Department of Energy (DOE) must not make any move to ship highly radioactive wastes to the Yucca site until it can be proven to be environmentally sound. The Environmental Impact Statement (EIS) conducted for Yucca mountain states that we can expect no significant contaminant releases into the air or groundwater, but seismologists have confirmed that earthquake activity will cause walls to crack and wastes to leak in the groundwater and contaminate the air. Yucca Mountain and surrounding areas have experienced nearly 600 earthquakes in the past 20 years, and we can expect continued seismologic activity. Experts have concluded that groundwater passes through this region at a rapid rate, meaning that if a leak occurs, contaminants could be quickly taken up and carried long distances.]

- 3 [If a high-level nuclear waste dump opens in Nevada, over 77,000 tons of hazardous radioactive materials will be shipped across the country to be buried within the mountain. With 90% of the waste located at sites east of the Mississippi, residents in cities like St. Louis, Chicago and Denver may see as many as 96,000 truckloads and 300 railroad shipments of deadly nuclear waste passing by through their communities over the course of 20-30 years. Accidents will happen, and we cannot be sure that communities will be able to respond when they do. The EIS on Yucca Mountain does not sufficiently discuss the proposed shipping routes or the training and equipment necessary for emergency response personnel in communities along the route. This information is an essential part of determining the safety of these shipments and the project as a whole.]

- 4... [The Department of Energy's own analysis of the site suggested that there would be fewer deaths and injuries if the DOE allowed waste to remain at the existing power

4 cont. plants and storage sites, yet there is still a push to send the waste to Yucca Mountain. PSR calls on Spencer Abraham to put health and safety above industry profit by stopping a premature decision to truck wastes to the Yucca Mountain repository. The most practical solution is to store waste at the site of origin until a safe and permanent site and transportation proposal are confirmed.

5... Supporting Statement 2.

EPA Radiation Standards Offer Inadequate Protection from
Proposed Yucca Mountain Nuclear Dump

Important Precedent for Groundwater Protection Undermined by Rule's Deficiencies

WASHINGTON, D.C. ?The Environmental Protection Agency (EPA) today finalized radiation protection standards for the proposed Yucca Mountain nuclear waste repository that establish a regulatory framework for legalized radiological contamination in Nevada, said environmental, public interest, and consumer advocacy groups today.

"This is another example of the Bush Administration weakening environmental regulations to keep a bad project alive," said Lisa Gue, policy analyst with Public Citizen's Critical Mass Energy and Environment Program.

Yucca Mountain, located near Las Vegas, Nev., is currently the only site under consideration for a potential dump for high-level radioactive waste generated by U.S. commercial reactors and weapons facilities. Yucca Mountain sits above an aquifer that is a critical source of water for irrigation, dairy farming and drinking water. The EPA is required by the Nuclear Waste Policy Act to set radiation protection standards for the site. The agency released a proposed rule for comment in 1999. The final rule was issued today.

The final EPA rule retains a standard for multiple pathways of 15 millirem per year and a separate 4 millirem per year standard for exposure from groundwater. The separate groundwater standard was a central focus of public comments to the agency during the rulemaking process. However, the measures for implementing these standards continue to be inconsistent with basic scientific and regulatory principles. For these reasons, we oppose the final EPA rule.

The central weaknesses of the EPA standards include:

- o By arbitrarily limiting the standard to the first 10,000 years of operation, the dose limits for the repository do not account for the maximum radionuclide exposures that will be caused by Yucca Mountain, which are projected to occur much later.

- o The compliance point for determining conformity with the 4 millirem per year groundwater standard is located 18 km from the site, rather than within the site boundary.

- o EPA's dilution factor and distant point of compliance for the groundwater standard are contrary to the requirements of the Safe Drinking Water Act.

- o EPA does not take into account the substantial radiation sources at the Nevada Test Site, which the Department of Energy estimates could have impacts on groundwater quality comparable to those of Yucca Mountain.

"While we view the inclusion of a separate groundwater standard for Yucca Mountain as a very important precedent, the EPA standards for Yucca Mountain will not adequately protect the public," said David Adelman, senior attorney with Natural Resources Defense Council. Moreover, the Bush Administration's standards undermine the Safe Drinking Water Act by significantly weakening the implementation requirements for the groundwater standard.

Public interest, environmental, and consumer advocacy organizations have closely followed EPA's rulemaking process for this standard, and have consistently emphasized the need for a stringent standard given the extremely toxic nature of high-level

5 cont. radioactive waste and the lack of experience with geologic disposal. "EPA's final rule does not address many of our significant health and safety concerns associated with the Yucca Mountain repository proposal," said Ruth Swanson, Associate Executive Director of Physicians for Social Responsibility.

Although the rule issued today contains a separate groundwater protection standard, the final EPA standards for Yucca Mountain threaten public health and promote reliance on dilution rather than containment of nuclear waste to meet regulatory requirements. "From the beginning, the process for devising standards for Yucca Mountain has been driven by the intent to fit the standards to the site, rather than to ensure that the public and the environment are adequately protected," said John Hadder, northern Nevada coordinator with Citizen Alert. "The standard issued today continues this tradition."

Supporting Statement 3.

Comments on the Draft Environmental Impact Statement

on the Yucca Mountain Repository

(DOE/EIS-0250D)

by Arjun Makhijani, Ph.D.

23 February 2000

The Draft EIS of the Department of Energy (DOE) on the Yucca Mountain Repository is premature, scientifically unsound, fundamentally deficient, and improperly dismisses a crucial environmental justice issue. These conclusions are illustrated by the following points, which are discussed in more detail after the list:

1. The Draft EIS is premature because the basic scientific work needed to assess the environmental impact of the repository has not been completed. Some of it is still the subject of intense scientific controversy, research and debate. Essential questions must be resolved before the impact of the repository can reasonably be assessed.
2. The Draft EIS is scientifically unsound because it has ignored or improperly dismissed published peer-reviewed data, ignored lines of inquiry, not established a valid basis for uncertainty analysis, and failed to consider any redundancy in systems, which may result both in lower uncertainties and better containment.
3. The Draft EIS is fundamentally deficient because it has not considered some of the most significant environmental impacts, ignored relevant alternatives, and ignored many problems associated with human intrusion.
4. The Draft EIS has improperly dismissed a crucial environmental justice issue without due consideration of President Clinton's executive order on environmental justice.

1. and 2. The EIS is premature and scientifically unsound

The presumption in the Draft EIS is that the repository will be unsaturated - that is it will not at any relevant time have a significant probability of flooding with water. The DOE's assumption is unsound. The DOE's reasoning in summarily dismissing the evidence for repository flooding in the geologic past is based on misleading and selective use of information. There is a good deal of evidence indicating flooding of the repository. There is also some evidence of relatively recent flooding (in geologic

terms). The entire Yucca Mountain repository program is based on the assumption of an unsaturated repository. Given the centrality of this issue, the DOE should re-issue a draft EIS with its analysis of the environmental consequences of such flooding, so that the public can evaluate it on its merits.

Moreover the DOE has ignored the ongoing work that it has commissioned and is being performed by Dr. Jean Cline at the University of Nevada, Las Vegas. The DOE project aims to confirm or negate earlier findings of hydrothermal incursions of groundwater into the repository horizon as well as to determine the date(s) in the geologic past when such incursion(s) might have occurred.

With the major exception of geologists involved with the Yucca Mountain Project, there is now widespread agreement that at some time in the geological past there were likely to have been hydrothermal incursions into the Yucca Mountain repository region. One or more such incursions in the future would utterly alter the analysis of repository impacts. This is therefore a crucial factor in projecting the performance of the proposed repository.

Were the issue being considered a marginal one, this sequence might, in some circumstances be considered acceptable. However, the questions of saturation and time of saturation are the central ones in determining repository performance. The Draft EIS is therefore premature. It should be re-issued after the UNLV findings have been published, peer-reviewed and their significance for the proposed repository has been carefully assessed.

If a Final EIS is completed without the data and analysis on hydrothermal incursions being fully taken into account in the assessment of impacts, the FEIS will be so basically deficient as to be invalid.

Besides the issue of hydrothermal incursions, the DOE needs to take fully into account the potential for the metal canisters to corrode in relatively short time periods (say, a few hundred years or less) if the repository is unsaturated but far more humid than has been assumed. Further, under such circumstances, the DOE also needs to factor in the potential for the rapid disintegration of the borosilicate glass waste form due to hydration aging.¹ Finally, the DOE needs to factor in the potential for far more rapid migration of plutonium and other actinides than has been assumed.

3. The EIS is fundamentally deficient

Both of DOE's "no action" scenarios are straw men designed to orient the decision to "yes" for Yucca. Scenarios need to be plausible at least.

Inadvertent human intrusion is more likely to occur into or near the repository location because of the scarcity of groundwater resources in Nevada and possibly because of mineral deposits in the general area. The impact of inadvertent human intrusion needs to be more carefully considered. It is unlikely that barriers and markers would endure for thousands of years. While there are instances of monuments enduring for thousands of years, there are many more instances of monuments disappearing altogether. The EIS needs to have a more realistic assessment of inadvertent human intrusion problems and a fuller description of the potential impacts not only on the hypothetical intruders, but also on other members of the public, after the intrusion has occurred.

The "no action" Scenario 1 of institutional control for 10,000 years on site is absurd and without historical foundation. The second "no action" alternative assumes on site storage for 100 years and loss of control after that. It assumes that society will take no action to protect the plutonium or the waste. This is equally absurd, given that huge quantities of weapons-usable plutonium are present in the waste and that the radiation barrier to the recovery of the plutonium will be sharply reduced after a few hundred years due to the decay of cesium-137 (half-life: about 30 years).

DOE recognized in its EIS that these scenarios are unlikely and that society would consider other ways of handling this problem. It dismissed these as "speculative" (p. S29). This is a deeply flawed argument. First the DOE's "no action" scenarios are not truly "no action". Both scenarios would require the US government to take control of the waste and put in place institutional and other control measures. It will likely have to build new storage facilities. The true "no action" alternative would be to

leave the fuel in the control of the utilities, where it is today. There are a number of downsides to this, as there are to every alternative. A scenario having downsides is not a bar to its consideration under NEPA. On the contrary, a part of the objective is to illustrate both the advantages and disadvantages, so an environmentally sensible decision can be made.

PSR/Atlanta believes that the EIS should consider the no action alternative of leaving control on-site with utilities, which may then be expected to minimize their liabilities in various ways, instead of the two spurious and entirely implausible scenarios that it has set up. Moreover, the calculation of the impacts of these scenarios is highly speculative, so speculative as to be without significant scientific merit. It cannot provide a rational basis for decision-making in a NEPA document.

Further, the EIS needs to consider the possibility that Yucca Mountain is found unsuitable in a more realistic framework other than a "no action" alternative. It is not speculative to say that alternative means of management and disposal would be considered if Yucca Mountain were found unsuitable. Some of these means are well-known and documented in the literature. For instance the 1983 National Research Council report on geologic isolation² examined a number of different geologic types and locations.

DOE should create a set of realistic alternatives in case Yucca Mountain is not found suitable.

PSR/Atlanta applauds and appreciates the fact the DOE evaluated peak doses for up to 1 million years and did not restrict itself to the arbitrary time limit of 10,000 years in the draft EPA Yucca Mountain standard. The 10,000-year limit has been rejected more than once by the National Research Council and by many others. This feature of the EIS should be maintained.

The DOE has not chosen the location of the maximally exposed individual conservatively. That individual should be located at the site boundary and not 5 kilometers away

The DOE's analysis that the primary radiological impacts would occur from the water pathway is not correct for collective population doses. The EPA Science Advisory Board report on carbon-14 emissions from Yucca Mountain showed that, while the individual doses from carbon-14 emissions would be tiny, the collective global doses would be immense. Based on the linear no-threshold hypothesis, which is the basis for current radiation protection standards, and which is also the modeling approach recommended in the BEIR V committee report,³ carbon-14 collective doses would be estimated to cause thousands of cancer fatalities.⁴ These estimates cannot be ignored in the Draft EIS.

Moreover, the Draft EIS not only dismisses the potential for the repository to be saturated in the future; it does not discuss at all the possibility that upwelling contaminated water may outcrop at the surface (see attached analysis by Dublansky). Such an outcrop could contaminate large land areas, depending on the amount of upwelling water and the location of the outcrop. The DOE should consider land and surface water contamination impacts on the human population of such outcroppings as well as underground water contamination due to repository flooding, in its evaluation of which pathway would be the one to deliver the maximum individual dose. The DOE should also consider the larger ecological impacts of outcropping of contaminated water. These could be diverse and vast.

4. Environmental Justice

We do not believe that referring to a Supreme Court decision regarding Western Shoshone land is sufficient consideration of the environmental justice issue. The Supreme Court has historically made decisions that have reflected prevailing social opinions that have been highly discriminatory and unjust - as in its support of slavery, segregation, and internment of Japanese Americans. That these decisions have been unjust has been acknowledged by the Supreme Court in its reversals of such decisions after decades.

The fact the Western Shoshone themselves have not accepted any money in compensation for their land should provide enough basis for a deeper consideration of their claims.

The basis for this consideration in an EIS rests both in the presidential order on environmental justice and in the historical record of Supreme Court decisions and reversals on issues relating to oppressed minorities in the United States. The consideration of this issue in depth does not mean that DOE is not "abiding by" a decision of the Supreme Court. It will simply put the Supreme Court decision in historical context.

Supporting Groups

Physicians for Social Responsibility ? www.psr.org

Alliance for Nuclear Accountability ? www.ananuclear.org

IEER www.ieer.org

Greenpeace ? www.greenpeace.org

Natural Resources Defense Council ? www.nrdc.org

Nuclear Information and Resource Service ? www.nirs.org

Public Citizen's Critical Mass Energy and Environment Program - www.citizen.org

U.S. Public Interest Research Group www.publiccitizen.org

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